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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/721,148  | 11/25/2003  | Lyle Shirley         | MIT-094CP2CN        | 6327             |
| 21323   | 7590        | 10/05/2004           | EXAMINER            |                  |
| TESTA, HURWITZ & THIBEAULT, LLP<br>HIGH STREET TOWER<br>125 HIGH STREET<br>BOSTON, MA 02110 |             |                      | SMITH, ZANDRA V     |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2877                |                  |

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/721,148

Applicant(s)

SHIRLEY, LYLE

Examiner

Zandra V. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 10-18 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 19 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7-2-04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

Claims 10-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 02 July 2004.

### ***Information Disclosure Statement***

The information disclosure statement filed 02 July 2004 has been placed in the application file, and the information referred to therein have been considered.

### ***Claim Objections***

Claims 19 and 20 objected to because of the following informalities: there is no antecedent for "said point" in line 5 of claim 9. Claim 20 is included for its dependence on claim 19. Appropriate correction is required.

### ***Allowable Subject Matter***

Claims 1-9 are allowable over the prior art of record.

Claims 19-20 would be allowable if claim 19 were amended to overcome the objection(s) above.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, taken alone or in combination, fails to disclose or render obvious an apparatus and method for projecting fringes that includes, a collimator in optical communication with two

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sources, said collimator generating two substantially collimated beams of broadband radiation, a diffractive grating in optical communication with said collimator, and a lens in optical communication with said diffractive mating, wherein said lens generates two images of radiation having a spatial distribution of spectral regions (claim 1), or providing two sources of radiation separated by a distance and moving one of said sources relative to the other of said sources (claim 19), in combination with the rest of the limitations of claim.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

*Maxey et al. (4,298,286)* discloses a measuring apparatus that includes multiple light sources to project a fringe pattern on a surface but fails to provide a diffraction grating, collimating lens or moving one light source with respect to another.

*Kuchel (5,135,308)* discloses a method and apparatus for non-contact measuring of object surface that includes the use of two light sources to direct light through respective gratings and lenses to produce a fringe on the surface of the object but fails to provide a collimating lens in optical communication with the two light sources.

*Takamiya et al. (5,640,239)* discloses an optical device and displacement information measurement apparatus that includes the use of a single light source and lens to direct collimated light through a grating to produce a fringe on the surface of an object but fails to provide two light sources or moving the light sources with respect to one another.

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*Muller (6,100,977)* discloses a device and process for measuring two opposite sides of a body that includes the use of a single light source to direct a light beam through gratings to produce fringes on opposing surface of an object but fails to provide two light sources, moving one light source with respect to one another or a collimating lens.

*Ex parte Quayle*

This application is in condition for allowance except for the following formal matters:

See above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

*Fax/Telephone Information*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zandra V. Smith whose telephone number is (571) 272-2429.

The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Zandra V. Smith  
Primary Examiner  
Art Unit 2877

September 27, 2004